

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972W - WHITE SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

1. PRODUCT IDENTIFICATION

MSDS Number: ALSG972W-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: White Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: White Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of white smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
White Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Terephthalic Acid	5 mg/m ³	5 mg/m ³		100-21-0
Nitrocellulose				9004-70-0

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4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions Aggravated by Exposure: None known
Ingestion: May cause irritation of gastrointestinal tract.	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take with Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972R - RED SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

1. PRODUCT IDENTIFICATION

MSDS Number: ALSG972R-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: Red Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: Red Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of red smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
Yellow Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Dye, Disperse Red 9				82-38-2
Nitrocellulose				9004-70-0

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ALSG972R - RED SMOKE GRENADE



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4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions Aggravated by Exposure: None known
Ingestion: May cause irritation of gastrointestinal tract.	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take for Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972R - RED SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972G - GREEN SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

1. PRODUCT IDENTIFICATION

MSDS Number: ALSG972G-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: Green Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: Orange Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of green smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
Yellow Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Terephthalic Acid	5 mg/m ³	5 mg/m ³		100-21-0
Dye, Solvent Yellow 33				8003-22-3
Dye, Solvent Green 3				128-80-3
Nitrocellulose				9004-70-0

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972G - GREEN SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions Aggravated by Exposure: None known
Ingestion: May cause irritation of gastrointestinal tract.	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take with Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972G - GREEN SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972Y - YELLOW SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

1. PRODUCT IDENTIFICATION

MSDS Number: ALSG972Y-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: Yellow Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: Yellow Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of yellow smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
Yellow Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Dye, Solvent Yellow 33				100-21-0
Nitrocellulose				9004-70-0

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972Y - YELLOW SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions Aggravated by Exposure: None known
Ingestion: May cause irritation of gastrointestinal tract.	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take for Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972Y - YELLOW SMOKE GRENADE

EMERGENCY TELEPHONE: +1 (870) 405-1764



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9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG9720 - ORANGE SMOKE GRENADE

EMERGENCY TELEPHONE: +1 (870) 405-1764



1. PRODUCT IDENTIFICATION

MSDS Number: ALSG9720-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: Orange Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: Orange Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of orange smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
Yellow Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Dye, Solvent Yellow 33				8003-22-3
Dye, Disperse Red 9				82-38-2
Nitrocellulose				9004-70-0

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG9720 - ORANGE SMOKE GRENADE

EMERGENCY TELEPHONE: +1 (870) 405-1764



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4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions Aggravated by Exposure: None known
Ingestion: May cause irritation of gastrointestinal tract.	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take with Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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MATERIAL SAFETY DATA SHEET (MSDS)

ALSG9720 - ORANGE SMOKE GRENADE

EMERGENCY TELEPHONE: +1 (870) 405-1764



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9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972V - VIOLET SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

1. PRODUCT IDENTIFICATION

MSDS Number: ALSG972V-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: Violet Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: Violet Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of violet smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
Yellow Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Dye, Disperse Blue 3				2475-46-9
Dye, Disperse Red 9				82-38-2
Nitrocellulose				9004-70-0

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972V - VIOLET SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions: None known
Ingestion: May cause irritation of gastrointestinal tract.	Aggravated by Exposure: None known
	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take with Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972V - VIOLET SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972-Blue - BLUE SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

1. PRODUCT IDENTIFICATION

MSDS Number: ALSG972-Blue-MSDS	Manufacturer: ALS Technologies, Inc.
Product Name: Blue Smoke Grenade	Street Address: 1103 Central Blvd.
Product Family: Smoke Grenades	Mailing Address: PO Box 505
CAS Number: N/A	City: Bull Shoals
CAS Name: N/A	State: Arkansas
Common Name: Blue Smoke Grenade	Postal code: 72619
DOT Information: 1.4G, UN0303, "Ammunition, Smoke"	Phone: +1 (870) 445-8746
Date Prepared: 08 April 2010	Web: www.alstechnologies.com

2. PHYSICAL DATA

Appearance: Metal cylinder with fuse containing a solid mixture of blue smoke powder	Melting Point: N/A
Color: Aluminum or dark green	Boiling Point: N/A
State: Solid	Flash Point: N/A
Odor Characteristics: Slight odor when smoke mixture is burned	Freezing Point: N/A
pH: N/A	Percent Volatility: N/A
Viscosity: N/A	Evaporation Rate: N/A
Specific Gravity: N/A	Solubility in Water: N/A
Vapor Density: N/A	Solubility in Oil: N/A
Vapor Pressure: N/A	Solubility in Acetone: N/A

3. HAZARDOUS INGREDIENTS

Ingredient Name	OSHA PEL	ACGIH TLV	Approx. Volume	CAS Number
M201A1 Delay Igniter				
Ignition Mixture			5 grams	
Potassium Nitrate				7757-79-1
Silicon	15 mg/m ³	10 mg/m ³		7440-21-3
Charcoal				1333-86-4
Nitrocellulose				9004-70-0
Yellow Smoke Mixture			235 grams	
Sucrose	15 mg/m ³	10 mg/m ³		57-50-1
Potassium Chlorate		5 mg/m ³		3811-04-9
Magnesium Carbonate	15 mg/m ³	10 mg/m ³		546-93-0
Dye, Disperse Blue 3				2475-46-9
Nitrocellulose				9004-70-0

MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972-Blue - BLUE SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

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4. FIRE AND EXPLOSION HAZARD DATA

Flammability: Yes	Unusual Fire & Explosion Hazard: Shock sensitive; burns with high heat producing dense smoke.
Flash Point: N/A	Special Firefighting Procedures: Do not fight fire. Evacuate downwind and allow material to burn out.
Flammability Limits in Air % by Volume: Upper: N/A Lower: N/A	
Auto Ignition Temp: N/A	
Extinguishing Media: Dry chemical foam recommended	
Viscosity: N/A	
Specific Gravity: N/A	
Vapor Density: N/A	
Vapor Pressure: N/A	

5. HEALTH HAZARD DATA

Inhalation: May cause irritation of respiratory tract.	Acute: None
Skin Contact: Irritation may occur after prolonged contact.	Chronic: None
Eye Contact: May cause mild irritation.	Medical Conditions Aggravated by Exposure: None known
Ingestion: May cause irritation of gastrointestinal tract.	Sign and Symptoms of Exposure: None known

6. FIRST AID MEASURES

Inhalation: Remove to fresh air.	First Aid: Seek attention from a physician if any medical problems arise from exposure to this product.
Skin Contact: Remove contaminated clothing and wash with soap and water.	Notes to Physician: None
Eye Contact: Flush with water, remove to fresh air.	
Ingestion: Contact physician.	

7. REACTIVITY DATA

Stability: Stable	Hazardous Polymerization: None
Incompatibility: Strong oxidizers (Materials to Avoid)	Conditions to Avoid: Keep away from high heat, open flames, and strong oxidizers.
Hazardous Decomposition Products: May product carbon monoxide and/or carbon dioxide on burning.	

8. SPILL OR LEAK PROCEDURES

Actions to Take with Leaks & Spills: Ignitable dry mix. Sweep or vacuum with dry vacuum.	Waste Disposal Method: Hazardous waste; ignitable mix. Dispose at approved site.
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MATERIAL SAFETY DATA SHEET (MSDS)

ALSG972-Blue - BLUE SMOKE GRENADE



EMERGENCY TELEPHONE: +1 (870) 405-1764

9. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use approved full face respirator or SCBA in conditions exceeding PEL.

Eye Protection: Safety glasses

Skin Protection: Wear suitable protective clothing to prevent skin contact.

Other Clothing: Gloves to prevent skin contact

Other Clothing: Gloves to prevent skin contact

Other Equipment: N/A

Ventilation: Local or general ventilation to meet PEL limits.

Engineering Controls: N/A

10. HANDLING AND STORAGE

Special Precautions: Keep away from high heat, open flames, and strong oxidizers.

Other Precautions: None